

1 Introduction

The Australian government commissioned this study to:

- determine the needs for the 65km stretch of highway between Cooroy and Curra; and
- develop a strategy to progressively meet these needs for the next 30 years,

The Queensland and Australian governments appointed a study team to examine the long-term upgrade of the Bruce Highway between Cooroy and Curra. The Bruce Highway (Cooroy to Curra) Strategic Planning Study was initiated to investigate how best to improve safety, reduce delays and improve freight efficiency during the next 30 years whilst minimising impacts on existing communities and the environment.

The Bruce Highway has been progressively upgraded north from Brisbane in response to increased traffic volumes, higher freight demands and population growth. The highway has been constructed to a six-lane standard from Brisbane to Caboolture. North of Caboolture, the Bruce Highway has been constructed generally to a four-lane rural highway standard to Cooroy. Construction to a six-lane standard is currently underway between Caboolture and the Caboolture Northern Bypass. The section of highway north of Cooroy is the next two-lane section requiring duplication to the four-lane rural standard. Currently, an urban section of the Bruce Highway north of the Gympie-Brooloo Road (Kidgell Street) to Pine Street is being upgraded to four lanes, running through Gympie to address current congestion and safety issues.

The current highway north of Cooroy has been progressively improved over a long period. The route was established when traffic volumes and speed were significantly lower than today. Periodic alignment and safety improvements have attempted to keep pace with the relatively recent and rapid traffic growth in the corridor. However, the road is still a two lane multiple access facility undertaking the functional requirements of a dual carriage way rural motorway.

At many locations through the study area, the existing Bruce Highway does not meet the performance expectations for the AusLink National Network.

This study will identify the best corridor for the highway to provide a safe and efficient solution for the longer term, while minimising impacts on existing communities and the environment. The study commenced in 2004 and is expected to be completed in 2007. The original study area was very large, covering an area of approximately 800km². In August 2006 the study team reduced this to a refined study area from within which the new highway corridor was selected.

1.1 Purpose of This Report

This report has been prepared to document the study's process since the release of proposed corridor in March 2007. This includes describing the:

- Public display of the proposed corridor;
- Options considered from community and stakeholder feedback; and
- The recommended corridor.

1.2 Limitations of this Report

This report has been prepared in accordance with our client's particular instructions and requirements and addresses their priorities at this time. Arup does not accept any liability or responsibility whatsoever to any person other than the Queensland Department of Main Roads, including:

- Any use of this report by any third party; or
- Any third party whose interest may be affected (whether directly or indirectly) by any the contents of this report.

This Corridor Report is not an Environmental Impact Statement (EIS), and has taken environmental assessment to a level necessary to determine the location of the highway corridor. This report acknowledges that there are environmental issues that will need to be considered in greater detail than in this strategic level of investigation. This report provides recommendations for these issues to be appropriately addressed in future detailed planning and design stages.

Within the area of the proposed Traveston Crossing dam the refined study area follows the dam's eastern edge in land that will form part of the dam's buffer area. Options initially considered that traversed this area have not been progressed further in this report. Should the dam not proceed then the location of the highway may change to an alignment close to the existing Bruce Highway as originally favoured by the community.

This report is based on the information included in the Shortlisting Report (October 2005) and subsequent investigations by the study team. A number of key local and state government stakeholders have also provided considerable input to the corridor assessment process.

This process of corridor evaluation and selection has taken into account the views and concerns of those who have contacted the study team through submissions, phone calls or other means. Not all of the expectations have been met, however the study team considers that the recommended corridor presented in this report is a balanced result of consideration of a range of competing factors.

Data limitations and assumptions are summarised in Section 1.5 of this report.

1.3 Overview of the Study Process to date

The study is being delivered as a staged approach, as discussed below and shown in **Figure 1.3a**:

1.3.1 Stage A: Constraints and Deficiencies

The initial stage of the project focused on the collection of base data, identification of deficiencies of the existing highway and mapping of constraints to establish a new corridor. This included a household travel survey, distributed to select households within the local area, and a newsletter introducing the study. The outcome of this stage of the study was the release of the Constraints and Deficiencies Report in December 2004 and staffed displays outlining the data gathered. The report release was supported by Newsletter 1 which sought community feedback.

1.3.2 Stage B: Option Generation and assessment

The release of Newsletter 2 sought community input to assist with the ranking of assessment criteria. Using the baseline information gathered and analysed during Stage A, the study team generated a wide range of possible corridor options, which were then assessed against selection criteria. This led to a number of shortlisted corridor options. Maps of these options and supporting documentation including Newsletter 3 and the Shortlisting Report were released for public comment in November 2005 at displays in various locations throughout the study area. A 12-week consultation period followed. Between 7 November 2005 and 27 January 2006, the study team received almost 1,600 individual written submissions from households and groups, more than 400 phone calls and thirteen petitions with in excess of 2,800 signatures.

1.3.3 Stage C: Selection of Proposed Corridor

Concerns about the short listed options led to a public meeting on the 19 November 2005 and the subsequent election and formation of a community group called the Cooroy Curra Community Committee (CCCC).

From December 2005 to May 2006, the study team met with the CCCC and local council representatives to assess and discuss possible alternatives and to review the existing short-listed options. As a result of this input the CCCC and local council representatives provided to the study team, the original assessment criteria were put aside, and a set of guiding

principles agreed. The feedback received during the 12-week consultation period following the release of the short listed options in November 2005 was also analysed in conjunction with the input provided by the CCCC.

Using the agreed guiding principles a new set of assessment criteria were developed to compare and assess the performance of new and previous options. The new criteria significantly strengthened the importance of social issues.

One of the main community concerns was the need to bring certainty about the future location for the highway upgrade as quickly as possible. In response, a refined study area' (RSA) was determined, within which the study team could continue to develop and assess corridor options. The RSA was released in August 2006 and covered an area of approximately 63km², compared to the original study area of approximately 800km².

To assist in determining the corridor location within the RSA, nominations were sought from community members in or close to the refined study area to participate in Community Focus Groups (CFGs).

Five Community Focus Groups were formed to cover the RSA and met with the study team a number of times in November and December 2006 providing important information that assisted in finalising the corridor location. The meetings also enabled CFG representatives to gain a greater understanding of the issues surrounding the selection of the highway corridor.

Newsletter 4 also encouraged community feedback through written submissions. In addition to the input provided by the CFGs, approximately 343 comments and submissions were received and provided further information about areas within the refined study area, including environmental conditions, property impacts and land use concerns about potential corridor options within the refined study area.

After an intensive consultation period and investigatory process, and completion of further investigations the study team identified the proposed corridor, taking into account the following:

- Community feedback and submissions (including local business stakeholders);
- Guiding principles and new assessment criteria developed in conjunction with the CCCC;
- CFG submissions;
- Additional investigations into physical and environmental conditions;
- Input from key local and state government stakeholders;
- Submissions and discussions with other stakeholders who have approached the study team;
- Independent (of the study team) technical engineering review (conducted by DMR); and
- Refinement of engineering design.

The Queensland Department of Main Roads released Information Sheets 1 and 2 (October 2006) and 3 (December 2006) in direct response to community concerns about the effects of the RSA.

1.3.4 Stage D: Refinement of Proposed Corridor

In March 2007, the proposed corridor was placed on public display, with a two-week display in Gympie and a mobile display visiting Cooroy, Federal, Kybong and Curra. Newsletter 5 was distributed to the community showing a map of the proposed corridor and providing details of the displays.

The displays included a 12.5 metre long map of the entire proposed corridor, with aerial photography and cadastral data to ensure community members could identify their properties in relation to the proposed corridor.

The Queensland Department of Main Roads wrote to all landholders whose properties were directly affected by, or within 500 metres of, the proposed corridor and included a copy of Newsletter 5.

Directly affected landholders were encouraged to make appointments for one-on-one meetings with Department of Main Roads officers to discuss individual situations and issues such as property resumptions.

Newsletter 5 and the displays provided the community with the opportunity to make final submissions to the study team about the corridor location.

Community feedback opportunities included response forms available at the displays, toll free 1800 number Reply paid post address, dedicated email address and fax number.

By close of the comment period, on Friday 13 April 2007, the study team had received 96 requests for additional information; including an explanation of what it meant to be within 500 metres of the proposed corridor; requests for corridor maps, copies of the report on CD and copies of the corridor visualisation DVD.

The study team received 404 items of feedback, including one petition of 316 signatures opposing the location of the Cudgerie Interchange and one 64-signature petition supporting the proposed corridor location at Kybong. Each petition was recorded as one item of feedback for the purposes of statistical recording.

The major feedback issues related to opposition to the location of the proposed interchange at Cudgerie Drive and the impact of noise and the need for appropriate barriers. More detailed information is provided in Section 2.

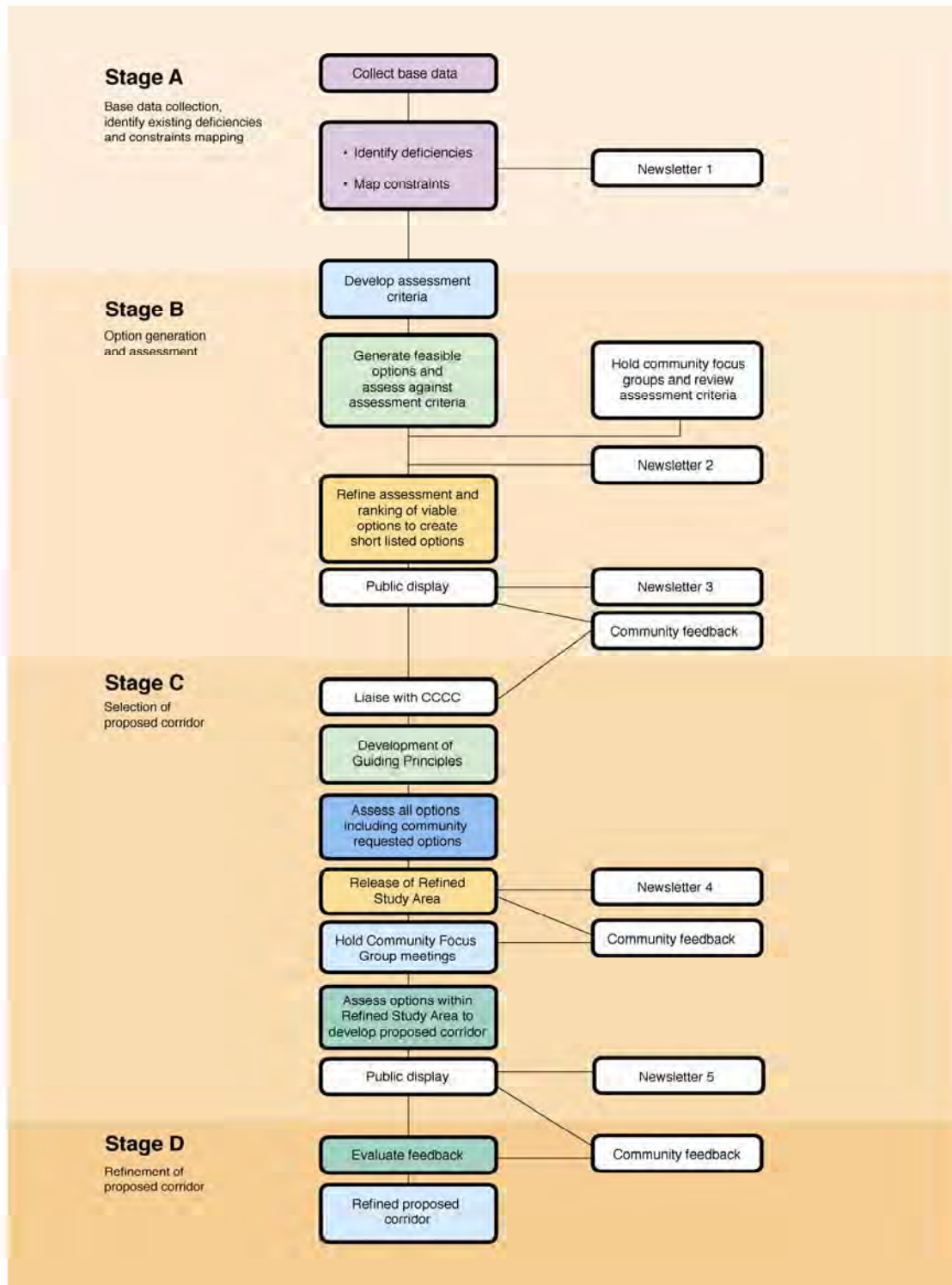


Figure 1.3a: The study process

1.4 Consultation Overview

Throughout the study process, contact has been maintained with the community by periodic media releases, the distribution of 5 newsletters, fact sheets, information sheets, displays and focus groups. A free call number and website have been available since the commencement of the project. Responses and feedback are regularly received via facsimile, post and email and are entered into the study database. Four community surveys have also been conducted during the course of the study.

1.5 Data Limitations and Assumptions

This is a strategic study, which has been carried out to a level of detail to provide the study team with sufficient information to assess and balance a range of competing factors to identify a highway corridor. It has been necessary for the study team to rely on a number of external data sources, including the following:

- The highway corridor presented in this report has been prepared on the basis of existing digital cadastre database (DCDB) information. This information has been checked and updated by reference to existing survey plans within the Refined Study Area. Actual survey of land boundaries will be required as part of the future design and property acquisition process.
- The digital terrain model (DTM) is made up of a combination of ridge and valley break lines and 5m contours. Checks at known locations indicate that the DTM can approximately be between 5m and 7m in error vertically. The options generally have earthworks batters slopes of 1 vertical to 2 horizontal. A vertical discrepancy of 5m means that the horizontal offset can be in error by approximately 10m. As such, further refinement of land requirements will occur in subsequent design phases when more accurate ground surveys are undertaken.
- Aerial photography has been updated periodically throughout the study. Aerial photography was last captured July 2006.
- Zoning and council overlay information has been updated periodically throughout this study.
- Land owner details are not static and have therefore been periodically updated throughout the course of the study. This information has been used to identify landowners with whom consultation during the course of this study was required. This information has been sourced directly from local councils and was last updated in mid January 2007.
- Environmental datasets were sourced from the Queensland Government. Datasets used in this study are subject to periodic updates. Updates have been sought as they have been made available. Disclaimers about the use and reliability of this data apply.
- Estimated construction costs have been prepared on a comparative basis to allow evaluation of corridor options and should not be used for budgetary purposes without further development. They do not account for GST, escalation, side tracking, traffic management, construction staging, unfavourable ground conditions, design fees, client charges, land issues, EPA requirements and approvals or costs and fees from any other required approvals.
- Detailed on-site systematic geotechnical investigations have not been carried out at this stage of the study. Detailed geotechnical investigations would be undertaken in later stages of design. As the geotechnical investigation did not encompass site specific investigations of sufficient detail to be able determine substructure requirements.
- The highway corridor design details, access arrangements and possible land requirements shown in this report are subject to change after landowner discussions and detailed planning and design.

- The highway corridor provides for a 6 lane configuration. Initial construction is anticipated to consist of dual two lane standard (divided four lanes). Adjustments to the corridor are anticipated when balancing the earthworks once stages of construction are identified.
- The environmental fieldwork program was developed to inform the corridor evaluation and highway corridor selection process. This fieldwork program was developed in consultation with the Queensland Environmental Protection Agency. Fieldwork was undertaken at representative sites across the study area to provide a broad overview of potential issues. This study does not rule out the need for a referral of the project (or stages of the project) under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) to the Commonwealth Department of Environment and Water Resources (previously the Commonwealth Department of Environment and Heritage). Accordingly, further environmental investigations and liaison between DMR and Department of Environment, Heritage and Arts (DEHA) will assist in the decision of whether referral of the project is required. Should the project be referred, DEHA is then required to consider the potential for impacts to matters of national environmental significance (NES) to result from the project, and decide whether the project is a 'controlled action' requiring further environmental assessment or approval (which may include an Environmental Impact Statement).
- Cultural Heritage information included in this study has been provided by the Gubbi Gubbi, who are the relevant Aboriginal Party for the area as recognised by the Queensland Aboriginal Cultural Heritage Act 2003. An Indigenous Cultural Heritage Survey has not been conducted as part of this investigation, however a review of the potential for sites and places of significance to be located in the project area has been carried out. Pursuant to the requirements of the Queensland Aboriginal Cultural Heritage Act 2003, a Cultural Heritage Survey and Cultural Heritage Management Plan and Agreement will be required as part of the future design and assessment process.
- Statistical interpretation of community feedback has been used to report back to the community on recurring themes and suggestions from the public, and to guide the investigation of options.

1.5.1 Corridor Assumptions

The highway corridor has been identified based on the following:

- Guiding principles (discussed in Stage C – Proposed Corridor Report) are representative of the broader community interest and supersede the previous criteria developed for this project.
- Constraints information- identified during previous stages of the study and updated and refined through subsequent field and other investigations.

The corridor has been developed with regard to the following project objectives:

- The existing highway is to remain as a local arterial road and maintain connectivity to most of the local roads and properties that currently have direct access to the existing highway.
- To improve safety, the highway will be a limited access road. This limits local roads and fronting properties having direct access to the highway. Access to and from the new highway to major roads will be at regular but widely spaced interchanges. These access arrangements help to separate fast moving highway traffic from slower moving local traffic, providing a safer more efficient road system.
- Access to properties to be maintained wherever possible through service roads, access ways and or overpasses/underpasses.
- Planning horizon of 30 years to cater for future needs. Progressive upgrades working north from Brisbane to Cooroy have bypassed town centres and made provision for a

fully grade separated route with a high standard of road geometry and high posted speeds. This is reflected in the geometric standards derived from the Department of Main Roads requirements (Roads Planning and Design Manual) and it is appropriate for the upgraded highway to continue this standard.

- To meet the strategic needs of the highway for the next 30 years, it is necessary to plan for the new highway corridor to be of rural motorway standard which caters for safe and high speed travel. Rural motorway standards require a minimum design speed environment of 120km/hr, based on posted speeds of 110km/hr.

Further details on the standards adopted are available in Section 1.6 of the Shortlisting Report – Baseline Report (Volume 3).

1.6 Report Structure

This report is structured in the following manner:

- Section 2: Public display of the proposed corridor;
- Section 3: Options considered from feedback;
- Section 4: The recommended corridor; and
- Section 5: The Next Stage.

2.0 Public Display of the Proposed Corridor

2.1 Community Response to Proposed Corridor

2.1.1 Public display

Commencing on Wednesday 14 March 2007, the Proposed Corridor was placed on public display for two weeks.

A fixed display was located at the Gympie Civic Centre for the entire period, while for one week a mobile display visited the following communities:

- Cooroy – two days;
- Federal – one day;
- Kybong – one day; and
- Curra – one day.

Each display included more than 12 metres of detailed maps showing the proposed corridor and properties, seven information panels covering the corridor benefits, study process, community consultation process, community input, community concerns and how various options were assessed.

Copies of the three-volume corridor report and more detailed property based maps were available for inspection at the display. In addition, a 3D computer generated corridor visualisation was played constantly for viewing at each display venue.

Approximately 1800 visited the two-week display at Gympie, while around 600 people attended the mobile displays.

Newsletter 5 (which included the map of the Proposed Corridor and details of the display venues) was issued to all levels of government for approval in February / March 2007.

Newsletter 5 was released on 12 March 2007 with approximately 27,000 distributed to community, libraries, Councils, local businesses. Additionally, 18 detailed maps covering the 65kms and showing properties and the Proposed Corridor were also uploaded to the Main Roads website.

2.1.2 Landowner meetings

The owners of directly affected properties and properties within 500 metres of the proposed corridor received letters from the Department of Main Roads advising them of their status and enclosing a copy of Newsletter 5.

Those landholders directly affected by the proposed corridor were asked to contact Main Roads to make an appointment for a one-on-one discussion in relation to their property and potential options.

2.1.3 Issues raised

The public was provided with multiple options for providing feedback about the proposed corridor. These options included:

- Toll Free dedicated 1800 phone line;
- Reply Paid postal address;
- Dedicated email address;
- Fax number; and
- Feedback sheets at each display.

The proposed corridor public comment period closed on Friday 13 April 2007.

At the close on the comment period, the study team had received 96 requests for additional information; including an explanation of what it meant to be within 500 metres of the

proposed corridor; requests for corridor maps, copies of the report on CD and copies of the corridor visualization DVD.

308 items of feedback were received by the study team, including one petition of 316 signatures opposing the location of the Cudgerie Interchange and one 64-signature petition supporting the proposed corridor location at Kybong. Each petition was recorded as one item of feedback for the purposes of statistical recording.

The issues raised by the community in the feedback provided to the study team can be summarised as follows:

- Access to the highway corridor from other roads, overpasses and premises;
- Pollution – water table, airborne and water tank contamination;
- Noise and Noise barriers;
- Environmental concerns;
- Property resumptions – when and appropriate property values;
- Devaluation of property;
- Opposition to interchange locations – Cudgerie Drive and Gympie Connection Road;
- Excessive lighting at interchanges;
- Support for interchange locations – Cudgerie Drive, Mary River Road; and
- Support for the proposed corridor through Kybong, especially at Tandur Road.

Of those, the following were mentioned in a significant number of the 308 feedback items:

Issue	Number Of Times Raised
Cudgerie Interchange – Opposition to location	68
Noise – impact on community, need of barriers	61
Tank water pollution	29
Impact on property	26
Impact of Increased traffic	25
Interchange at Mary River Road – proposed by Cudgerie opponents	19
Excessive interchange lighting	18
Air pollution	17
Child safety from increased traffic flows (Cudgerie Estate)	15
Gympie Connection Interchange – Opposition to location	12
Support proposed corridor at Tandur Road -	6
Cudgerie Interchange – Support for the proposed location	3
Interchange at Pomona Connection Road – proposed as an alternative to Cudgerie Drive	2
Interchange at Black Mountain Range Road - proposed as an alternative to Cudgerie Drive	2
Gympie Connection Road Interchange – Support for the proposed location	2

2.1.4 Matilda Kybong

The study team has extensively evaluated the location of the proposed corridor in relation to the Matilda Service Station at Kybong.

The study team has had several meetings with the operators of the service station during the development of the refined study area and during the establishment of the proposed corridor.

Matilda Fuel Supplies made its submission via letter, objecting to the proposed corridor on the basis of losing a business that provides around 110 jobs, loss of amenities for motorists, loss of community amenity, construction time, cost and vegetation loss. A subsequent submission raised the issue of an impact on fuel prices.

Community input was also sought by the study team, through the Kybong CFG.

Following the release of the proposed corridor, six responses were received from the community on Tandır Road and the Bruce Highway in the vicinity of the Matilda Service Station, including one petition of 64 signatures. The petition is in favour of, and supports, the proposed corridor. The petitioners do not wish to see it moved closer to the existing Bruce Highway.

The general view expressed by the community is that the proposed corridor is the best option, minimising the impacts on the community as a whole.

Further discussion of the issues in the Kybong area are included in section 3.2 of this report.

2.2 Local Government response

2.2.1 Noosa Council

A submission by Noosa Council focused on the location of the interchange near Cooroy. Several meetings were held with Noosa Council and included technical engineering officers/transport planners and the local councillors and Mayor. Section 3.1 of this report outlines the issues and study team recommendations associated with the Noosa Council submission.

2.2.2 Cooloola Shire Council

A submission by Cooloola Shire Council's (CSC) had two main issues:

- Need for north facing ramps at the Woondum Interchange to facilitate access to the industrial estate and surrounding areas; and
- Resultant upgrades needed to the local network as result of the interchange location at Gympie Connection Road.

These issues and study team recommendations associated with these issues are outlined in sections 3.3 and 3.4 of the report.

2.3 State Government Departments

The study team engaged with all state government agencies to inform them of the study process. Individual meetings were held with Queensland Transport (QT), Queensland Rail (QR), State Development, Education Queensland and Powerlink. No major issues were raised during these agency discussions.

The following sections outline issues raised with specific agencies.

2.3.1 Queensland Water Infrastructure

Discussions with Queensland Water Infrastructure (QWI) highlighted the benefits to the community that could be achieved by aligning the road corridor within the dam's buffer zone. Further discussion on the issues in the Kybong area are included in section 3.2 of this report.

2.3.2 Environmental Protection Agency

During the course of the study, several submissions were received relating to the 'Gympie Pyramid'. It was deemed appropriate to address the concerns raised in these submissions, through the conduct of additional archaeological heritage investigations at the site in question.

In accordance with the requirements of the *Queensland Heritage Act 1992*, a permit was obtained prior to conducting the archaeological heritage investigations. The Environmental Protection Agency approved the method and signed off on the approach and were kept apprised of the outcomes of the investigations as they were completed.

The outcome of this investigation is documented in the '*Cultural Heritage Survey of Rocky Ridge, Gympie*' (Archaeo Cultural Heritage Services), which is included as **Appendix A**.

2.3.3 Queensland Parks and Wildlife Service

The EPA and the Queensland Parks and Wildlife Service were consulted further in relation to the proposed realignment of the corridor through a section of the Curra State Forest.

There will still be a requirement to conduct further environmental assessment to identify appropriate mitigation measures during the development and design of this section of the corridor, at the appropriate time.

2.4 Commonwealth Departments

2.4.1 Department of Transport and Regional Services

The Department of Transport and Regional Services (DoTaRS) were kept informed throughout the study process via frequent briefings. As the funding authority of the study DoTaRS was represented on the project steering group.

2.4.2 Department of Environment, Heritage and Arts

Previously the former Department of Environment and Water Resources (DEHA) had written to DMR requesting an update on the status of the project. Given that the strategic planning study was nearing completion, an update will be provided to the DEHA for their further information about the project outcomes and future potential environmental assessment considerations as the sections of the corridor progress to the design development phase.

3.0 Options considered from feedback

3.1 North Cooroy Interchange

Issues were raised from the community and Noosa Council regarding the location of an interchange at Cudgerie Drive/Cooroy Connection Road. These issues include;

- Increased traffic along Cudgerie Drive;
- Increased noise for residents of Cudgerie Estate;
- Excessive lighting in proximity to Cudgerie Estate;
- Doesn't relieve heavy vehicle traffic through the Cooroy town centre/main street;
- Congestion of the intersection adjacent to the north coast rail overpass (Myall St);
- Congestion of Diamond St/Cooroy Connection Road intersection.

3.1.1 Alternative options

The study team investigated numerous locations and alternative configurations for interchanges to service the area north of Cooroy including;

- a) The proposed corridor with interchange located at Cudgerie Drive;
- b) An interchange at Mary River Road Overpass, linked to Cudgerie Drive via a new service road (Refer Figure 3.1a);
- c) An interchange located in the Yurol State Forest, linked to Cudgerie Drive via a new service road; and
- d) Split interchange which includes north facing ramps at Cudgerie Drive and south facing ramps at Mary River Road, linked via a new service road.

The performance of these options was assessed in comparison to the Cudgerie Drive/Cooroy Connection Road interchange location as shown on the proposed corridor.

3.1.2 Validity of Traffic Model Use

The traffic model developed for the purposes of the planning study was based on an extensive amount of strategic traffic data collected specifically for model development including household travel surveys and observed origin and destination data. Model validation focused primarily on strategic Bruce Highway movements in, around and through the Gympie township. The base year (2004) modelled daily traffic volumes correlated with observed data for strategic traffic movements with sufficient accuracy as to provide input into the assessment of the relative differences between different Bruce Highway upgrade options and interchange locations. Nonetheless, the strategic traffic model can also be used as a valuable tool for more detailed and localised traffic studies providing an adequate review of the particular local traffic movements within the model.

3.1.3 Traffic performance

Any amendments to the proposed interchange location need to be justified from a traffic network viewpoint as a key objective of this strategic study is to deliver the optimal road transport solution. The traffic modelling shows that the location best suited for the interchange is at Cudgerie Drive/ Cooroy Connection Road. This location would function best as it is able to attract the largest volumes of traffic to the new high standard corridor and reduce the numbers of vehicles using lower standard roads.

The hierarchy limitations in the existing road network at Cooroy are a significant factor to the functionality of an interchange at Mary River Road. Traffic from the interchange would be led into the town centre rather than a network that will serve the broader communities.

Figure 3.1b shows the forecast 2026 average daily traffic volumes on the Cooroy network for options a and b described in section 3.1.1.

The inclusion of a service road in option b switches some traffic from the new corridor to the new service road, however this is not restricted to the 2.5km length of new service road. As the access point (interchange) is also moved, the traffic must decide to exit/enter the new corridor at less desirable locations. Most of the vehicles switching to the service road are undertaking long distance trips and should have the ability to use the new high standard corridor. All interchange options incorporating a new service road have fewer vehicles on the new corridor due to their inability to access the required locations using the new corridor.

Locating the interchange at Cudgerie Drive/ Cooroy Connection Road provides the greatest opportunity to maximise the utilisation of the corridor and increase safety.

Unlike Cooroy Connection Road, Cudgerie Drive is not designed to cater for large traffic volumes or heavy vehicles. Its steep grades, frequent intersections and current road width are deterrents to 'rat running' through the estate. With the interchange located at Cudgerie, the traffic on Cudgerie Drive will increase from 720 to 1120 per day (based on 2026 volumes). During future design phases Mains Roads will investigate methods to improve safety along Cudgerie Drive.

The issue regarding heavy vehicles passing through the Cooroy CBD is a result of the industrial estate being located on the western side of the town centre without an adequate road hierarchy in place. Council have advised that the origins/destinations of the heavy vehicles using the industrial estate are approximately split 50% to/from the east (Noosa/Sunshine Coast), 40% heading south (Bruce Hwy) and 10% heading north (Bruce Hwy). The current volume of heavy vehicles created by the industrial estate is considered to be relatively small. Locating south facing ramps at Mary River Road will remove approximately 40% of the heavy vehicles through the town. Council are continuing to investigate alternative options, however the future expansion of the industrial estate may warrant the inclusion of south facing ramps. This option can be considered in detail later if required.

None of the options that were raised by Council address the issues of congestion at the intersection adjacent to the north coast rail overpass (Myall St) or at the Diamond St/Cooroy Connection Road intersection. Other traffic network solutions to meet Cooroy's needs are likely to provide better overall solutions. A traffic network study is needed to address movements to, from and through Cooroy to determine the local road network needs. Main Roads would work with Noosa Council to consider road network options to serve Cooroy and surrounding areas.

3.1.4 Interchange spacing

The desirable minimum spacing of interchanges on a rural highway is 5 to 8km. It is undesirable to have successive entry and exit ramps closely spaced as this results in vehicles needing to weave between lanes. Weaving introduces an additional element of conflict and has a negative effect on both levels of service and safety. To satisfy safe weaving of vehicles across 3 travel lanes, a minimum distance of 1200m is required between the entry and exit manoeuvres of the existing Cooroy Interchange and any proposed interchange to the north. Mary River Road and Cudgerie Drive are positioned approximately 2.5km and 5km to the north of the existing Cooroy interchange respectively. The inclusion of south facing ramps at Mary River Road provides distances of 1100m and 1300m between the entry and exit manoeuvres for the northbound and southbound carriageways respectively. If proposed in the future these configurations would be investigated further to determine the arrangements needed to be safe and provide adequate levels of service.

3.1.5 Noise and lighting issues

It is considered that the noise and lighting issues associated with the interchange can be managed. Examples of designing to minimise noise emissions are, the use of a quiet asphalt surfaces and the construction of noise barriers/earth bunds which help to ameliorate the noise on nearby residences.

Similarly the use of aeroscreens and strategic placement of light poles can reduce the effects of interchange lighting. Further consultation with landowners and residents near interchange locations will need to be undertaken as the design process progresses, to identify appropriate solutions for these issues.

3.1.6 Environmental

The introduction of the service road option passing through the edge of Yurol State Forest generates additional land requirements, and widens an existing corridor through an area of habitat significance. These additional land requirements may also compound existing environmental effects already experienced at this location (fauna passage etc).

3.1.7 Recommendation

It is recommended that the proposed interchange at Cudgerie Drive/ Cooroy Connection road be retained. Although south facing ramps at Mary River Road are not required from a strategic transport perspective and their spacing to the Cooroy Interchange ramps may be undesirable the decision does not preclude construction of these ramps if they are warranted in the future and investigations determine that they can provide an adequate level of service in a safe environment.